DOCUMENT RESUME

ED 412 185 SP 037 555

AUTHOR Hagerty, Rebecka A.

TITLE Impact of the Efficacy Process on Students in Sacramento City USD Pilot Schools.

PUB DATE 1997-00-00

NOTE 32p.; Paper presented at the Annual Meeting of the American Educational Research Association (Chicago, IL, March 24-28, 1997).

PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.

DESCRIPTORS *Academic Achievement; *Achievement Gains; Elementary School Students; Grade 3; Pilot Projects; Primary Education; *Self Efficacy; *Student Attitudes; *Student Improvement

IDENTIFIERS *Sacramento City Unified School District CA

ABSTRACT

Research related to the implementation and impact of the efficacy process on teachers and students in four Sacramento (California) City Unified School District pilot schools over a 4-year period is described. The study investigated three research evaluation questions: (1) the extent of teachers' implementation of the efficacy process; (2) the degree of participating students' growth in personal efficacy; and (3) the degree to which participating schools showed improved performance on the Comprehensive Tests of Basic Skills (CTBS-U). Students enrolled in third grade in 1992-93 completed the School Attitude Measure (American College Testing) (SAM) and the CTBS-U in reading, language, and math in each of three successive years. Pilot schools were matched with comparison schools. Significant positive changes in achievement occurred over the period of the study (1992/93 to 1994/95) within the four efficacy schools and within the four non-efficacy schools selected for comparison. Math achievement rose more in the efficacy schools than in the comparison schools. Boys, African American students, and white students also experienced greater improvement in math achievement in efficacy schools than in comparison schools. Appendixes include: an assessment checklist; selection criteria for comparison schools; statistical analysis of paired (dependent) samples; charts comparing SAM of pilot schools, math scores and CTBS scores; and a comparison with the Detroit Study. (LH)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 412 185

Impact Of The Efficacy Process On Students In Sacramento City USD Pilot Schools

Rebecka A. Hagerty, Ph.D.

Accountability Office, Box 10
Sacramento City Unified School District
520 Capitol Mall
Sacramento, CA. 95814

Office: (916) 264-4297
e-mail: hagertyr@dcn.davis.ca.us

ABSTRACT

The purpose of this paper is to share research related to the implementation and impact of the Efficacy process on teachers and students in four Sacramento City Unified School District pilot schools over a four year period. The study asked three research evaluation questions: (1) To what extent have teachers implemented the efficacy process, as measured by an Efficacy Level of Implementation rubric? (2) To what degree do students who take part in the Efficacy process show growth in personal efficacy? (3) To what degree do schools which infuse Efficacy into their classrooms show improved performance on the Comprehensive Tests of Basic Skills (CTBS-U)? A level of Implementation Rubric was developed with the assistance of an Efficacy Institute national trainer. Students enrolled in third grade in 1992-93 completed the School Attitude Measure (American College Testing) and the CTBS-U in reading, language, and math in each of three successive years. Pilot schools were matched with comparison schools. Significant positive changes in achievement occurred over the period of the study (1992/93 to 1994/95) within the four Efficacy schools and within the four non-Efficacy schools selected for comparison. Math achievement rose more in the Efficacy schools than it did in the comparison schools. Boys, African American students, and white students also experienced greater improvement in math achievement in Efficacy schools than in the comparison schools. No statistically significant relationships were identified between SAM results and NCE scores, although correlations appeared to be weakly positive. Scattergrams did not appear to show any clear nonlinear relationships.

Paper presented at the 1997 Annual Meeting American Educational Research Association, Chicago, March 1997

A copy of this paper can be downloaded from the AERA Division H Homepage at: http://aera.net/divisions/h/ beginning in May 1997.

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

R. Hagerty

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

BEST COPY AVAILABLE

SP037555

Introduction. The SCUSD was awarded a three year grant by the DeWitt Wallace Foundation (Reader's Digest) to offer the Efficacy Institute Seminars to schools beginning in Fall 1992. The seminar, intended for teachers, focused on improving the academic performance of students through the development of positive attitudes toward learning. Four pilot schools received the initial five day seminar. The first four days involved presentation of theory and discussion of such topics as the innate ability and developmental models of learning as they operate at large and in schools. The final day organized teachers by grade level groups and focused on developing curriculum for students. By winter, the pilot schools had committed to serve as dissemination sources and to evaluate the effects of implementing efficacious processes in classrooms and throughout the school on students. In addition, the schools contracted for two additional visits (coaching and support) from Efficacy Institute Trainers. Trainers visited classrooms and met with teachers and administrators at each site.

In the following two years, fifty schools voluntarily completed the Efficacy Seminar. The purpose of this paper is to share research related to the implementation and impact of the Efficacy process on teachers and students in the four elementary pilot schools over a three year period.

Theoretical Perspective. Efficacy is defined as a judgment of one's personal capabilities (Bandura, 1986). It is viewed as a key element in student achievement of individual classroom tasks and mastery of subject matter in all disciplines. Self-efficacy finds its basis in the social-cognitive theory of Albert Bandura (1986). It is an individual's belief in his or her ability to perform a behavior in a given situation. People with a stronger sense of self-efficacy will decide to approach a complex situation due to their expectation of success.

According to Bandura, self-efficacy beliefs are formed as a result of four sources of efficacy information, the first being the most powerful and the last, the least powerful.

- Successful completion of a target behavior (inactive attainment).
- Observing or visualizing another person's completion of a target behavior, particularly when the model is perceived as being similar to him or her.
- Verbal persuasion.
- Physiological state

Once information is conveyed, an individual weighs, selects, and integrates it into a self-efficacy judgment.

An assumption often made in teaching is that if students are clear as to the outcome of a specific learning task and their behavior is clearly aligned with that outcome, there is an assurance of task completion and probable successful execution of the task. An alternative explanation would be that if students hold a clear efficacy expectation for a task, they believe they can execute the behavior required to produce the outcomes. Corno

(1986) argues that students must develop self-efficacy first in order to use cognitive learning strategies for a task or in a particular subject area. Students must learn to manage effort in the face of particular difficulties.

These difficulties can lie in the adult community (including racism and discrimination on the one hand and the failure to mobilize resources on the other). Obstacles can be external, external/institutional, internal/psychological and/or cultural. Many times they are subtle. The Efficacy Institute takes the position that when honestly confronted and openly acknowledged, the obstacles can be handled.

Teacher training models such as TESA (Teacher Expectations Increases Student Achievement) and Elizabeth Cohen's classroom collaboration model (1995) which emphasizes equal status interactions in classrooms both incorporate efficacious processes as an important variable in teacher behavior and student achievement.

Efficacy Institute Training and Implementation of Efficacious Processes. A well known and comprehensive curricular approach to student efficacy at the elementary, middle and high school levels is the work of Jeff Howard and the Efficacy Institute. This Massachusetts-based, non-profit organization provides seminars for school staff and other district personnel as well as ongoing coaching. Efficacy Institute seminars share theoretical constructs and research with teachers related to development and intelligence (Howard, 1991), attribution (Bernard, 1985; Driscoll, 1986), goal setting and expectancy/performance models (Dwek), and power/motivation (McClelland, 1991). Based on this training and the belief that all students can develop their intelligence through application and hard work, teachers apply their learnings to their own school and classroom settings.

The Efficacy Institute offers a classroom curriculum as a reference and a guide. Curriculum covers ten conceptual areas, which when applied are assumed to empower students with skills to manage and build confidence, take responsibility for and believe in their own learning processes. The teacher assists students in this development and avoids practices that imply that the student cannot "get smarter." Teaching staff also plan schoolwide activities which model the conceptual areas.

Conceptual Areas

Who Am I?	Using Feedback
Development	Obstacles and Problems
Think You Can	Rise to a Higher Level
Get Smart	think You Can, Get Smart
The Learning Zone	Weak-Side, Strong-Side

The Institute takes the position that while their curriculum is useful, most teachers already have an awareness of and use a variety of instructional strategies, curricular approaches and methods which can be called upon in building a comprehensive efficacious process in their classrooms.

Research Questions. The pilot school research addressed one evaluation research question related to staff level of implementation of the Efficacy process and two evaluation research questions related to student outcomes. The study was longitudinal, following school staffs and students over a four year period beginning in the 1992-1993 school year.

Staff Level of Implementation of the Efficacy Process:

Question 1. Level of Implementation. To what extent have teachers implemented the efficacy process, as measured by an Efficacy Level of Implementation rubric?

Student Outcomes:

Question 2. Student Attitudes. To what degree do students who take part in the Efficacy program show growth in personal efficacy as measured by the School Attitude Measure (SAM)?

Question 3. Student Achievement. To what degree do students in the four pilot schools show improved performance on the Comprehensive Tests of Basic Skills (CTBS-U)?

Data Sources or Evidence

Level of Implementation:

Question 1. Level of Implementation. To what extent have teachers implemented the efficacy process, as measured by an Efficacy Level of Implementation rubric?

An implementation rubric (Appendix A) was developed by the District Accountability Office in concert with the national Efficacy lead trainer, Diane Jackson. The rubric includes five stages. At the "beginning" stage of implementation, teachers can be observed using efficacious language in one subject area, students becoming familiar with the concepts, and begin to use the terminology. Teachers receive consi'ration and support for implementation from administrators and begin to discuss the ways in which students participate in class (including equity issues). Conversations with parents begin to include efficacious language and concepts. Teachers become more aware of the ways in which students are given feedback about their work.

By the "growing development" level of implementation, Efficacous processes can be observed across all subject areas. Student learning is more self-regulated with students actively discussing their learning goals and work in relation to student achievement. Parents begin to discuss their students' progress in terms of these concepts. Teachers, students and parents utilize a variety of approaches to recognize student achievement and discuss academic progress.

At the "full implementation" level, Efficacy is infused into all subject areas, and student learning is described as self-regulated, students actively discuss learning goals and work in relation to their achievement. Teachers utilize a variety of approaches to recognize student achievement. Parents are able to discuss their students' progress in terms of these concepts.

The rubric was field tested with the four pilot schools and subsequently validated by ongoing research in Kansas City, Kansas schools conducted by the Academy of Educational Development, New York. This group of researchers utilized ethnographic/observational methodology and analysis of student test scores to identify contextual features of schools which successfully apply the Efficacy process (1994). The rubric was administered to the Sacramento teachers each year in April. School principals also completed the rubric and participated in an in-depth interview.

During each year of the project, the principal and each school staff met with the Project Evaluator to review and discuss the findings and implications of the yearly evaluation report.

Student Outcomes:

Question 2. Student Attitudes. To what degree do students who take part in the Efficacy process show growth in personal efficacy as measured by the School Attitude Measure (SAM)?

The School Attitude Measure (American College Testing) was selected to answer this questions because of the close association of its scales with the Efficacy concepts as presented by the Efficacy Institute.

School Attitude Measure Subscales

Motivation for Schooling. Students general feelings about the school experience, how hard students want to work in school, and how highly they value school.

Academic Self-Concept-Performance Based. Students feelings about their performance and confidence in their abilities.

Academic Self-Concept-Reference Based. Students thoughts about how other people (teachers, family, friends) feel about their performance and abilities.

Sense of Control Over Performance. Students feelings about their own responsibility for the outcomes of situations and events at school.

Instructional Mastery. Students sense of their actual academic skills.

All students at the grade level designated by the study took the survey in April of each school year. i.e. third graders in April of 1993, all fourth graders in April of 1994, and all fifth graders in April of 1995. Longitudinal summaries of individual student progress were prepared and distribute to teachers and principals n a yearly basis.

Question 3. Student Achievement. To what degree do students in the four pilot schools show improved performance on the Comprehensive Tests of Basic Skills (CTBS-U)?

The CTBS-U scores of students with complete sets of Student Attitude and CTBS scores for the duration of the study were reviewed.

Pilot Efficacy Schools: NCE scores of students who had complete sets of both SAM and CTBS scores for all three years of the program (1992/93 to 1994/95) were used.

Matched NCE scores for each student were used to calculate three sets of changes in NCE scores: 2-year (1992 to 1994), first year (1992 to 1993) and second year (1993 to 1994). T-tests were performed on each set of paired differences to determine whether the average change in NCE was significant.

Comparison Schools: A group of schools with socioeconomic status (SES) rankings and distribution of CTBS results similar to those of the four pilot Efficacy schools were identified. From this group, four schools which did not receive Efficacy training during 1992-94 were selected to form a comparison group (see Appendix B). CTBS results of the comparison group who had a complete set of NCE scores for all three years were reviewed. Three sets of changes (2-year, first year, second year) in NCE scores were calculated and tested for statistical significance.

BEST COPY AVAILABLE

Pilot vs. Comparison Schools: T-tests were performed to determine whether pilot schools and comparison schools average improvements in NCE scores differed significantly from each other. Pilot and comparison school groups were not assumed to be dependent, i.e. their variances and means were not assumed to be equal (Appendix C).

Results

Staff Level of Implementation of the Efficacy Process:

Question 1. Level of Implementation. To what extent have teachers implemented the efficacy process, as measured by an Efficacy Level of Implementation rubric?

The Five Sections of the Rubric

1. Instruction
2. Resources & Materials
3. Classroom Organizational Strategies
4. Assessment
5. Teacher, Parent, School Relationship
6. Overall

Principal Ratings of Staff

	Prior to Development	Beginning Development	Growing Development	Almost Full Development	Zone of Optimal Development
1992-93		X			
1993-94			X		
1994-95			X		

Both teachers and their principal completed the implementation rubric. Teacher ratings were shared with principals for discussion. Teacher ratings tended to be higher overall than principals. The results reported in the above table, reflects principal determinations of the level of implementation for staff at that site. In June of 1993, the four Principals reported that they were at the Beginning-Growing stages of implementation. By June 1994, the rating reflected "growing development" with a few teachers still in the "beginning development" stage.

The principals felt that the Efficacy process gave teachers a common language for discussing issues, encouraged risk-taking in making changes in their classrooms, and encouraged renewed focus on selecting/developing challenging meaningful learning tasks for students. They also shared that unless teachers personally live the process, it will not make a difference for their students. To be effective, it has to be tied to actual student achievement in each class. They observed that as teachers came to believe more strongly that their students were capable of doing well on specific tasks, their students began to do better at those tasks. For example, one principal noted that "some teachers now really believe that their students can become good writers and as a result, the students are writing better."

Student Outcomes:

Question 2. Student Attitudes. To what degree do students who take part in the Efficacy process show growth in personal efficacy as measured by the School Attitude Measure (SAM)?

Third grade students enrolled at the pilot schools in April 1993 completed the School Attitude Measure (SAM). The measure was given in April of the following year, 1994, to all fourth grade students, and again in April of 1995 to all fifth grade students. Sixty-

BEST COPY AVAILABLE

eight students had completed the SAM during all three years. The SAM was not administered to a comparison group.

The graph displaying the means for these matched cases for the three years can be found in Appendix D.

In April of 1993, the baseline means on four of the five subscales were above the national mean of 50 NCE. This result was discussed as follows in the subsequent evaluation report on Efficacy presented to the district.

> "Local means may be higher than national means as a result of prior programs in each school related to student attitudes and instructional mastery. Implementation of efficacy lessons and concepts from October through February could also be an influence.
>
> The question was posed, "If SAM scores are already above the national mean, why do we need Efficacy?" It was concluded that the Efficacy process builds teacher and student capability culminating in improved academic achievement. It was expected that higher than average SAM scores would influence CTBS scores.

At the first comparison point, April 1994, there were gains on four measures:

Motivation for Schooling	+4.2 NCE
Self-Concept, Performance Based	+2.0 NCE
Self-Concept, Reference Based	-0.8 NCE
Sense of Control	+2.0 NCE
Instructional Mastery	+6.9 NCE

The following discussion was included in the June 1994 evaluation report.

> "Student growth in Instructional Mastery is considered important in terms of the Efficacy goal of incremental development. This subscale asked students to report on their actual school skills including ability to use time effectively, to focus attention and concentrate on tasks, to seek and use feedback, and to evaluate one's own work.
>
> Growth was across the board for both sexes. It is important to note that females consistently scored six to ten NCE points higher than males on all scales."

The report concluded

> "The data show positive growth for third grade students who have been involved in the Efficacy process. This is encouraging given that this data reflects the first year of Efficacy implementation. Often, when new school-wide processes are adopted, effects of the processes do not become apparent until the second year of implementation."

At the second comparison point, April 1995, the gains that did occur were minor. It was thought that the leveling of scores during the third year might be associated with the reduction in monetary and coaching support to these sites. The first year of implementation brought training, consultants and schoolwide implementation of the Efficacy processed; the second year, two Efficacy coach visits and a designated lead teacher at each site; the third year, no district support or grant funds. During this last period, Efficacy implementation was dealt with as each school could muster. In one

school, a lead teacher continued to direct implementation on her own time; in another, it was folded into a life skills emphasis, in another, the Principal continued working one-on-one with teachers. Two schools had large influxes of new staff members (seven to nine teachers) in need of training. Receiving training was problematic due to lack of substitutes. New teachers had little familiarity with the concepts, terminology or classroom strategies.

Student Outcomes:

Question 3. Student Achievement. To what degree do students in the four pilot schools show improved performance on the Comprehensive Tests of Basic Skills (CTBS-U)?

Significant positive changes in achievement occurred over the period of the study (1992/93 to 1994/95) within the four Efficacy schools and within the four non-Efficacy schools selected for comparison (Appendix E). Math achievement rose more in the Efficacy schools than it did in the comparison schools. Boys, African American students and white students also experienced greater improvement in math achievement in Efficacy schools than in the comparison schools.

Pilot Efficacy Schools Results: Over the two year period from 1992 to 1994, student scores improved significantly in reading, language and math in the four pilot schools. The group demonstrated a 5.0 NCE point growth in reading, a 3.7 point growth in language and a 9.1 point growth in math (Appendix F). These improvements were significant at the 99%, 95% and 99% levels, respectively.

During the first year, the average improvement in pilot Efficacy schools' student scores was significant in all three areas. Students in these schools demonstrated a 3.9 point increase in reading, a 5.9 point increase in language and a 6.5 point increase in math. Each of these increases was statistically significant at the 99% level.

During the second year of the Efficacy program in these schools, only math achievement showed significant growth. This increase, 2.6 NCE points, was significant at the 90% level.

Comparison Schools Results: Over the 2-year period from 1992 to 1994, comparison school student scores improved significantly in all 3 subject areas. Students in these schools demonstrated a 5.8 NCE point growth in reading, a 7.0 point growth in language and a 4.5 point growth in math (Appendix F). Each of these improvements was significant at the 99% level.

During the first year, only language achievement showed significant growth in the non-Efficacy comparison schools group. Language NCE rose by 8.2 points, significant at the 99% level.

In the second year, comparison school reading and math achievement showed significant growth. Students demonstrated 3.1 NCE point growth in reading and 4.2 point growth in math, significant at 95% and 99%, respectively.

Achievement Differences Between Pilot Efficacy Schools and Comparison Schools. Students in the four Efficacy schools demonstrated a greater improvement in math than did their counterparts in the four comparison schools during the two years of this study (1992/93 to 1994/95). The average increase in Efficacy students' math scores was 9.1 NCE points during this period, while comparison students' scores increased by only 4.5 points. The difference between the two, 4.6 NCE points, was significant at the 95% level.

BEST COPY AVAILABLE

Boys as a group showed a significantly greater improvement in math in the pilot Efficacy schools than they did in the comparison schools (Appendix G). Their math achievement rose by 11.4 NCE points over the 2-year period, while in the comparison schools, boys' math achievement rose only by 4.2 points. The difference, 7.2 NCE points, was significant at the 95% level.

Two ethnic groups had significantly greater growth in math NCE scores in the Efficacy schools: African American students and white students (Appendix H). African American students in the Efficacy schools experienced an average improvement of 8.4 NCE points, while African American students in comparison schools showed an increase of only 1.5 points over the 2-year period. The difference between the two groups was significant at the 90% level. There were only 6 white students in the Efficacy school group. These students had an average increase in their NCE scores of 16 points, significantly greater (at 95%) than the 2.8 unit increase of the 17 white students in the comparison schools.

Comparison of SAM and CTBS Results: No statistically significant relationships were identified between SAM results and NCE scores, although correlations appeared to be weakly positive. Scattergrams did not appear to show any clear nonlinear relationships.

No SAM pretest was given. The first SAM test was given to students in the pilot Efficacy schools in spring of 1993, after Efficacy was introduced and the CTBS-U was given in the fall of 1992.

Ways of evaluating the relationship between SAM and CTBS results need to be further developed. Neither the Detroit study (1992) of the effects of the Efficacy process on students nor the present study found statistically significant relationships between the results of these two measures. This relationship is of interest because it is theorized that changes in student attitudes as a result of Efficacy programs precede improvements in achievement (Appendix I).

Summary

Did CTBS scores change over the course of the project for the pilot Efficacy schools? Yes, since in every subject there was a significant increase in achievement over the two years of the study. In all three subjects there was a significant increase in average student NCE scores during the first year. Only math NCEs rose significantly during the second year.

What was the source of significant changes in NCE scores? Which classes within schools contributed to the change? This was looked at early in the analysis. Two bilingual classrooms evidenced the most dramatic growth on the attitude measure however, the analysis could not show that any one class was driving the results. Subdividing the sample into schools or classes resulted in very small sample sizes, greatly reducing the possibility of obtaining statistically significant results.

Did the comparison schools CTBS scores change between 1992 and 1994? The scores did change. Average increases in comparison school NCE scores were statistically significant in reading, language and math over the two-year period, although only language achievement increased significantly in the first year and only reading and math increased significantly in the second year.

Educational or Scientific Importance of the Study. Much of the research on self-efficacy measures small subsets of the construct (the constellation of cognitive schema's or networks of knowledge about the self) and, adds to our understanding of the possible relational schema's students can develop for themselves related to achievement in subject matter areas. The research described here studied the broad construct of self-efficacy as

it occurred in the naturalistic setting of the school and classroom. The pilot schools focused on enhancing self-efficacy and academic achievement school wide over a period of years. This study and findings can be of assistance to district research and development departments in designing evaluation research which includes teacher and student efficacy as a construct.

Implications and Extensions. The statistical analysis used for this study suggests ways in which useful information can be obtained quickly and clearly by testing paired samples.

A benefit of the study is the development of the 'Efficacy Level of Implementation' rubric. This evaluation tool enhanced visualization, discussion, and measurement of implementation. In general, as more becomes known about implementing efficacious processes in classrooms, tools such as this can become more precise and specifically defined.

How well students understand a program has a great effect on how successful the program is. An evaluation of students' understanding of Efficacy language, concepts and goals might shed additional light on the extent to which students are reached by this program.

Some Sacramento City USD schools now utilize highly defined and measurable subject specific programs such as Reading Recovery, Success For All. The structuring, clear articulation and assessment these programs incorporate also influences student sense of progress and self-efficacy. In addition, Sacramento City teachers now receive training in reading on a yearly basis. Future models should account for the effect of subject specific models of learning and teacher training on student attitudes and achievement in order to provide more information about the net effect of efficacious processes on student attitudes and achievement. Future models will utilize relational databases which can account for students who transfer schools or leave the district during the duration of the project.

Bibliography

Academy for Educational Development. School Application of the Efficacy Principles. A Report of the Preliminary Study of the Efficacy Institute's National Demonstration Project. New York, NY. September, 1994.

Bandura, A. Social Foundations of Thought and Action: A Social Cognitive Theory. Prentice-Hall. Englewood Cliffs, NJ., 1986.

Cohen, E. and Lotan, R.A. (1995). "Producing Equal-status Interaction in the Heterogeneous Classroom." American Educational Research Journal. Vol. 32, No. 1. 1995.

Corno, L. "The Metacognitive Control Components of Self-Regulated Learning." Contemporary Educational Psychology, Vol. 11, 1986.

Howard, Jeff. "Getting Smart: The Social Construction of Intelligence". Position paper. The Efficacy Institute. Boston, MA., 1991

McClelland, David C. Power: The Inner Experience. 1991.

Syropoulos, Mike. "The Elementary School Curriculum: Efficacy," Evaluation Report 1991-92. Department of Planning, Research and Evaluation. Detroit Public Schools. August, 1992

School _____ Completed by _____

Principal _____ Date _____

EFFICACY LEVELS OF IMPLEMENTATION

Assessment Checklist (Elementary School)

Directions: This checklist contains five sections related to implementation of Efficacy at your school:
(1) Instruction
(2) Instructional Resources and Materials
(3) Classroom Organizational Strategies
(4) Assessment
(5) Teacher, Parent, School Relationships.
Please check all items which apply. (In some cases, you may find it appropriate to check more than one response per line.) Use this assessment checklist to foster discussions with your colleagues and to decide where you are beginning and how you want to proceed over the course of the semester/year.

1. INSTRUCTION

PRIOR TO DEVELOPMENT	BEGINNING DEVELOPMENT	GROWING DEVELOPMENT	ALMOST FULL DEVELOPMENT	THE ZONE OF OPTIMAL DEVELOPMENT
☐ Little or no visual evidence of Efficacy concepts.	☐ Some visual evidence of Efficacy concepts (fliers, banners, bulletin boards) in some classrooms.	☐ Visual evidence of Efficacy concepts in most classrooms.	☐ Visual evidence of Efficacy concepts throughout all classrooms.	☐ Visual evidence of Efficacy concepts throughout all classrooms.
☐ Teachers unsure/ unaware of Efficacy process.	☐ Teachers and staff using Efficacy language in one subject area.	☐ Teachers and staff really believe in Efficacy. Use language in one or more subject areas.	☐ Teachers and staff believe in Efficacy. and begin to infuse the language across all subject areas.	☐ Teachers believe in Efficacy and the language is infused across all subject matter areas.
☐ Students unaware of Efficacy process.	☐ Students are familiar with terminology but may not have it internalized.	☐ Students are beginning to internalize and use the Efficacy concepts.	☐ Students actively use Efficacy language and concepts.	☐ Students and teachers actively use Efficacy language and concepts.
☐ Teachers are teaching as best they know how. They need insevice.	☐ Teachers actively internalizing and learning Efficacy. Need consultation and support.	☐ Focus of discussion is on application. "How can I continue to enhance the process of implementing the Efficacy curriculum?"	☐ Focus of discussion is on how to generate consistent improvement in students by structuring incrementally more challenging lessons.	☐ Teachers generate rapid development in their classrooms through curricular strategies.
☐ Teachers and students threatened by feedback to make changes.	☐ Teachers and students acknowledge feedback as a developmental process.	☐ Teachers and students actively use feedback as a developmental process.	☐ Administrator, teachers and students actively use feedback as a developmental process.	☐ Administrators, teachers, students and parents actively use feedback as a developmental process.

BEST COPY AVAILABLE

II. INSTRUCTIONAL RESOURCES AND MATERIALS

PRIOR TO DEVELOPMENT	BEGINNING DEVELOPMENT	GROWING DEVELOPMENT	ALMOST FULL DEVELOPMENT	THE ZONE OF OPTIMAL DEVELOPMENT
☐ Teachers not using Efficacy curriculum manual and guidelines.	☐ Teachers actively discuss and question Efficacy curriculum.	☐ Teachers have less dependency on Efficacy curriculum materials to enhance instruction. Some development of own Efficacy strategies.	☐ Teachers writing, implementing and evaluating their own Efficacy curricular strategies.	☐ Teacher developed Efficacious learning strategies are infused across the curriculum.

III. CLASSROOM ORGANIZATIONAL STRATEGIES

PRIOR TO DEVELOPMENT	BEGINNING DEVELOPMENT	GROWING DEVELOPMENT	ALMOST FULL DEVELOPMENT	THE ZONE OF OPTIMAL DEVELOPMENT
☐ Teachers use disciplinary measures to maintain quiet, orderly classrooms. Teachers refer to student character or past transgressions	☐ Teachers begin integrating Efficacy into classroom organizational strategies.	☐ Relaxed, friendly, harmonious classroom. Rules based on development.	☐ Classroom control based on development. Students take development seriously. Low incidence of misbehavior.	☐ Students monitor and assess their own development.
☐ Students may or may not be working in groups. Groups reflect innate ability model. Teachers need inservice.	☐ Students may or may not be working in groups. Teachers need support implementing developmental grouping strategies.	☐ Teachers researching classroom organizational strategies, i.e., cooperative learning and heterogeneous groupings. Teachers field testing these strategies.	☐ Teachers are thoroughly familiar with a variety of classroom organizational strategies. Teachers utilize these as needed and appropriate.	☐ Full collaboration among teachers about classroom organizational strategies.
☐ Discrepancies in the participation of different groups of students in the classroom, i.e., boys/girls, different ethnic groups, different ability/skill levels.	☐ Teachers become aware of discrepancies in the participation of different groups of students in the classroom, i.e., boys/girls, different ethnic groups, different ability/skill levels.	☐ Student participation in classsroom. Evidence of active learning, engagement of all students, reduction of discrepancies between ethnic groups.	☐ Student participation in classsroom. Active learning, engagement of all students, reduction of discrepancies between ethnic groups.	☐ Full student participation in classrooms.

BEST COPY AVAILABLE

IV. ASSESSMENT

PRIOR TO DEVELOPMENT	BEGINNING DEVELOPMENT	GROWING DEVELOPMENT	ALMOST FULL DEVELOPMENT	THE ZONE OF OPTIMAL DEVELOPMENT
☐ Teachers locked into the traditional "A-F" grading system. Incomplete records of student progress may occur.	☐ Teachers struggling with the grading system, making some adjustments, i.e., portfolios in some areas, traditional grading, such as chapter tests, in others.	☐ Teachers implementing alternative grading strategies, i.e., tests, portfolios, in some subject areas.	☐ Teachers implementing alternative grading strategies, using a variety of methods, i.e., separate grades for structure and content, checks and minuses, highlighting what needs to be worked on, portfolios, etc.	☐ The school institutes an alternative grading system.
☐ Teachers need site support with alternative assessment systems.	☐ Teachers are waiting for site support of their efforts.	☐ Teachers are receiving some site suport for alternative grading strategies.	☐ Teachers are receiving full site support with alternative grading strategies.	☐ An alternative grading system receives administrative and parent support.
☐ Teachers need site support with giving feedback and recognition to student progress in academic and nonacademic areas.	☐ Teachers struggling with giving feedback and recognition to student progress in academic and nonacademic areas.	☐ Teachers giving some feedback and recognition to student progress in academic and nonacademic areas.	☐ Teachers giving ongoing feedback and recognition to student progress in academic and nonacademic areas.	☐ Teachers and other school staff giving ongoing feedback and recognition to student progress in academic and nonacademic areas.

V. TEACHER, PARENT, SCHOOL RELATIONSHIPS

PRIOR TO DEVELOPMENT	BEGINNING DEVELOPMENT	GROWING DEVELOPMENT	ALMOST FULL DEVELOPMENT	THE ZONE OF OPTIMAL DEVELOPMENT
☐ Teacher-parent discussions reflect the innate ability model.	☐ Teacher-parent discussions begin to reflect the developmental model.	☐ Teachers frame discussions with parents around Efficacy concepts.	☐ Teachers and parents use Efficacy concepts. They freely discuss student development.	☐ Teachers, parents, and school staff have a common Efficacious base for discussing student development and achievement.
☐ Communication with parents is sporadic and focused on behavior.	☐ Teachers have a system in place to inform parents of student effort and how it relates to achievement.	☐ Communication with parents is more consistent. Administrators and staff identify a model for communicating with a wide audience of parents.	☐ Teachers offer get-togethers for parents about Efficacy.	☐ Teachers, parents and administrators offer regularly scheduled Efficacious activities.

BEST COPY AVAILABLE

VI. PULLING IT ALL TOGETHER WHERE ARE YOU OVERALL?

☐ PRIOR TO DEVELOPMENT ☐ BEGINNING DEVELOPMENT ☐ GROWING DEVELOPMENT ☐ ALMOST FULL DEVELOPMENT ☐ THE ZONE OF OPTIMAL DEVELOPMENT

THANK YOU VERY MUCH FOR COMPLETING THIS CHECKLIST !

Comments: _____

RH/de–Sac. CA
12-93

BEST COPY AVAILABLE

Appendix B

Selection of Comparison Schools

Comparison schools were not selected at the beginning of the project, because school participation in the Efficacy program was entirely v luntary. Which schools would be adopting Efficacy and in what year was not known in 1992. Forty-nine schools received some Efficacy training after 1991/92 and 30 of them eventually adopted Efficacy.

Socioeconomic status, or SES ranking was chosen as a basis for identifying a group of non-Efficacy schools with similar poverty status as the four pilot schools. SES ranking is a criterion that is used in setting district achievement targets for the Sacramento City Unified School District.

The correlation between SES ranking and reading achievement (in NCE points) is historically high. In 1993/4, the correlation between SES rank and reading achievement was 89%, and between SES rank and math achievement the correlation was 84%.

Three indicators are used to construct a school's SES index. First, each school in the district is given a ranking based on the proportion of students in that school who come from families receiving AFDC. Next, each school is assigned a rank based on the proportion of its students receiving Free/Reduced Lunch program services. Finally, each school is assigned a rank based on its stability index, or the proportion of students who were in continuos enrollment from October through June. These three indices are averaged, and the result is used to rank schools in "SES order." Each school's achievement targets for each school are set based on the average achievement of the 5 schools above and the 5 below it in SES rank.

To select comparison (non-Efficacy) schools, pilot school SES rank and SES components were compared with non-Efficacy schools' SES rank and components. This narrowed down possible candidates for a comparison group to 6 schools.

Reading, language and math NCE scores from the CTBS have been presented by Sacramento City Unified School District in recent years in a "four quarters of the distribution" graph. This "four quarters" distribution displays the percent of NCE scores for each subject and grade that fall between the 0th, 25th, 50th, 75th and 100th percentiles. In 1992 four quarters data was available for each school in the district. This "four quarters" data has been used in the past by the district to identify schools with similar needs for support.

The final 4 schools selected for the comparison group were chosen based on how well their "four quarters" distribution matched that of the pilot schools, both as a group and individually.

Schools that implemented or received training in Efficacy during 1992/93 through 1994/95 were excluded from consideration. Some schools that would have made good comparison schools, based on SES rank and distribution of CTBS scores, implemented Efficacy during the period of this study and could not be used for the comparison group.

Thank you to Paula A. Mara, M.S. for assistance with comparison sample selection and for the methodology and statistical analysis of sample and comparison groups.

BEST COPY AVAILABLE

Statistical Analysis of Paired (Dependent) Samples: testing for significant change when you have multiple observations over time from the same subject)

Example: pre-test and post-test after a special program has been implemented.
When you can use this approach?
The two populations you are drawing from have different means but each population has the same variance. Thus correlation may exist between the means of samples drawn from the two populations.

Example: sample 1 is the test scores of a group of students before receiving special instruction, sample 2 is the test scores for the same students after the instruction.

Data is in the form of matched pairs of one student's scores "before and after."
The hypothesis to be tested is whether the means of the two populations are equal or not:

H_0: $m_1 - m_2 = 0$
H_0: $m_1 - m_2 \neq 0$

Method: compute the test statistic
t = (mean difference)/{(std.dev. of difference)/(square root of sample size)}.
Compare this calculated value with values from the t distribution for the appropriate significance level (1-alpha/2) and degrees of freedom (n-1).

Computation steps:
1. Find differences d and mean difference dbar. Lower case d is the difference "before and after" and mean difference dbar is the mean of those differences.

2. Find the standard deviation of the difference $s_d = + S(d - Sd / n)^2/(n - 1)$

3. Construct t = (Sd / n)/(sd / + n). Compare it to the t-table in order to determine significance level for appropriate degrees of freedom.

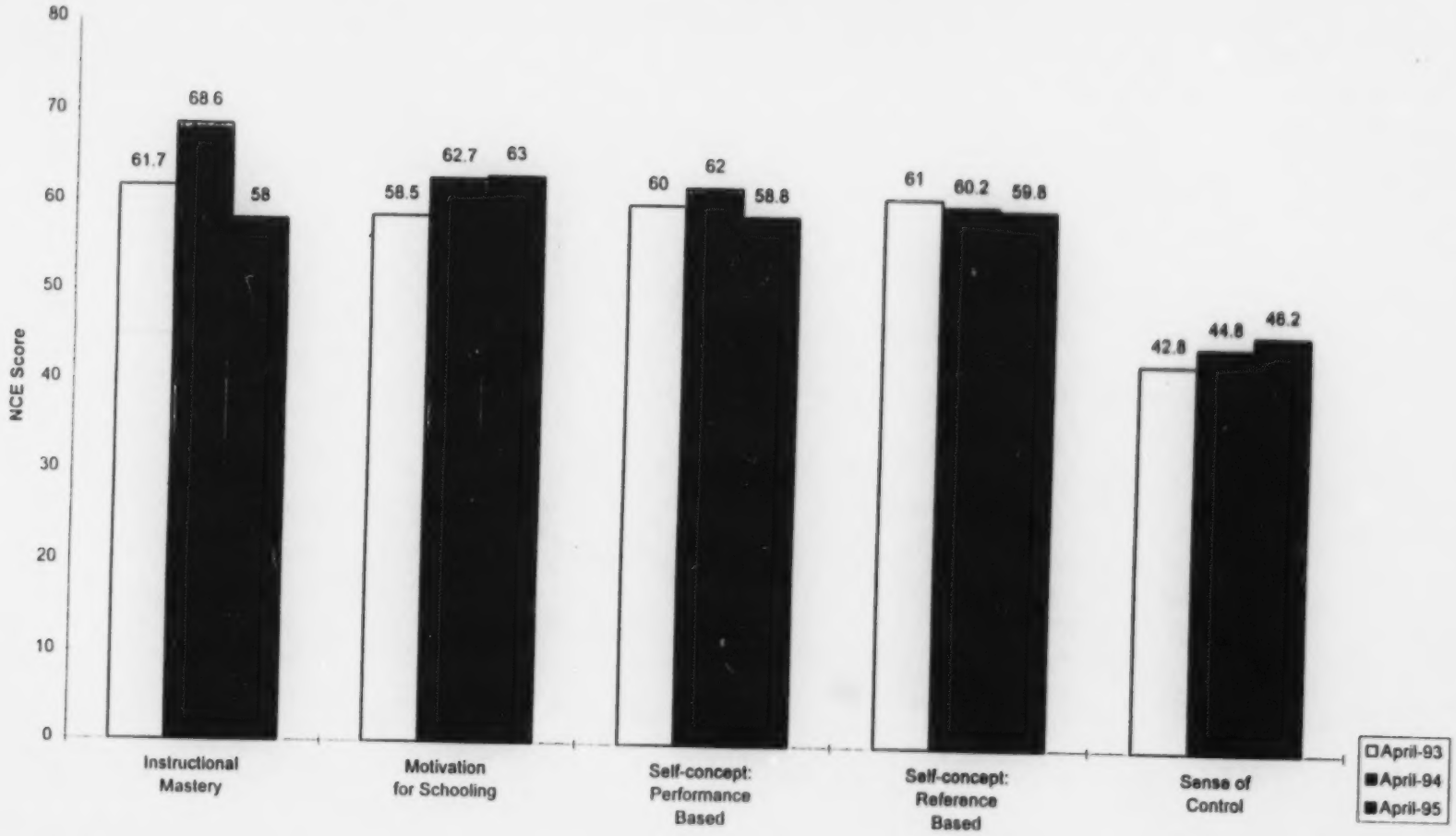
X1 (before)	X2 (after)	d = X1 - X2	(d - dbar)2
10	15	5	16
12	13	1	0
6	6	0	1
12	10	- 2	9
n = 4	sum	4	26
	mean dbar	1	

The sum of the squared differences is 26 and n-1 is 3, so the standard deviation sd is the square root of (26/3), or 2.9439. The resulting t-statistic is 0.6794, which is not significant with n-1 = 3 degrees of freedom. We would need a calculated t-statistic of 3.18 or greater to have significance at the 95% level with only 4 observations.

The NCE is distributed approximately as a uniform distribution. The Central Limit Theorem assures us that when a sample size is large, the sample means are distributed approximately normally. This is the rule that allows us to use the t-statistic.

BEST COPY AVAILABLE

Pilot Schools, Three-Year SAM Comparison (n=68)



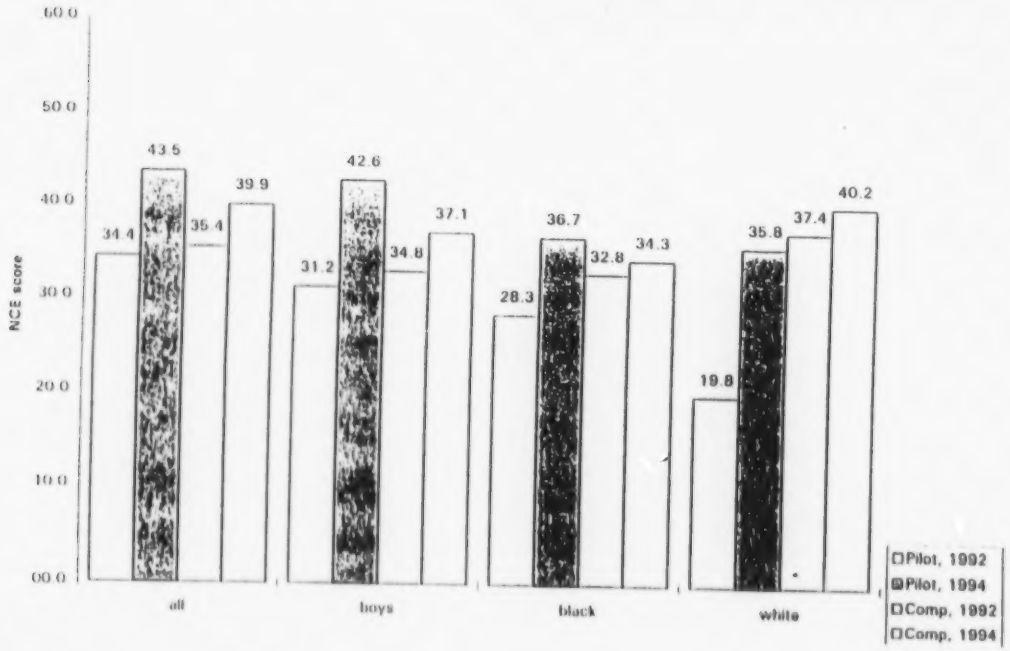
Appendix D

18

19

BEST COPY AVAILABLE

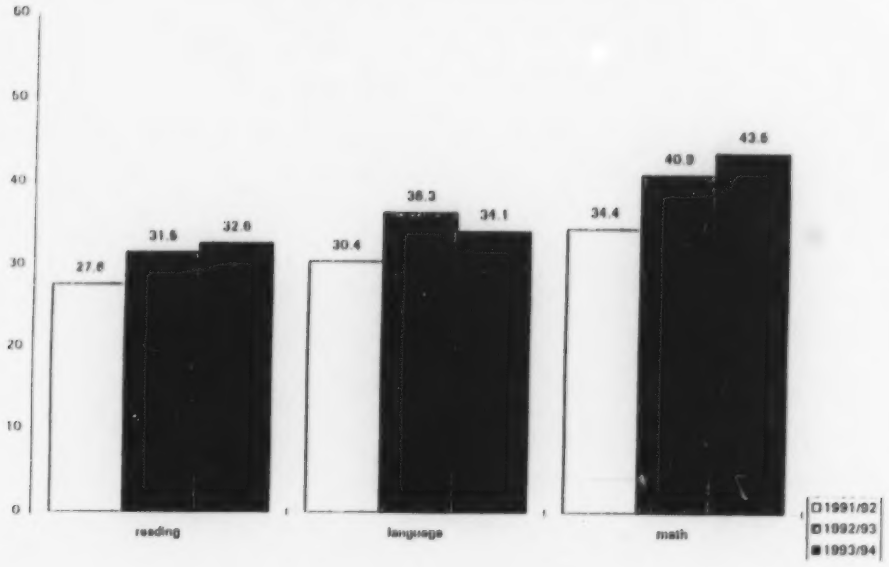
2 Year Improvements in Math NCE Scores Were Significantly Greater for Pilot Schools Than for Comparison Schools - As a Group, for Boys, for Black Students, for White Students



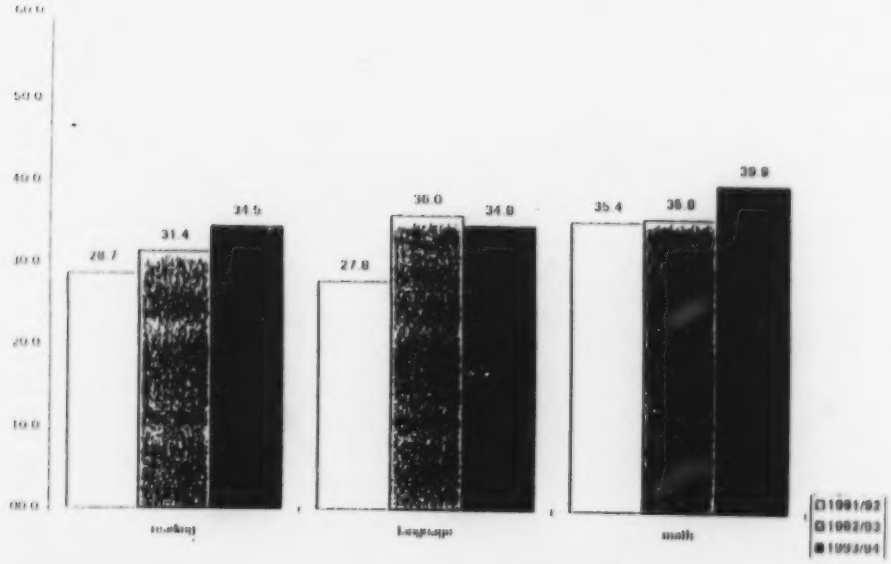
Appendix E

BEST COPY AVAILABLE

Pilot Schools Three-Year CTBS Comparison, Matched Scores (n = 80)



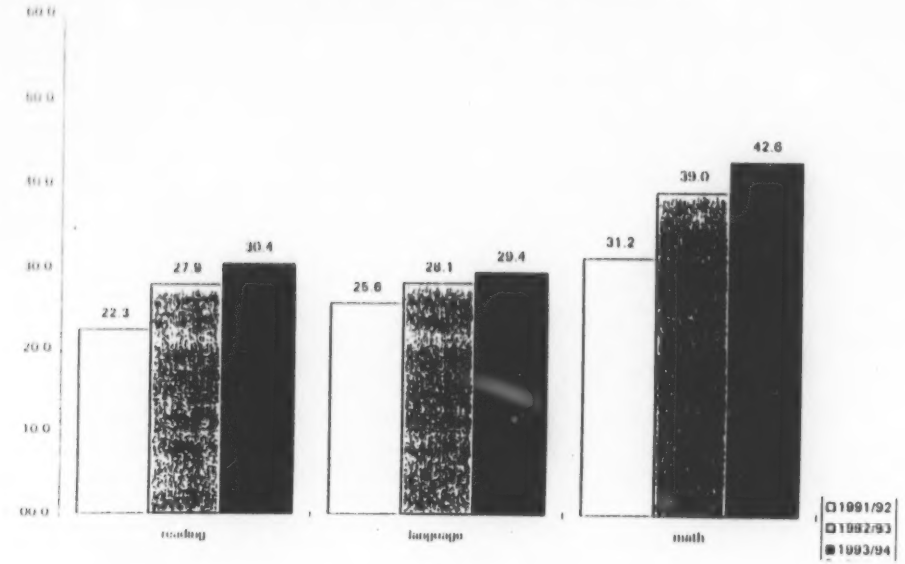
Comparison Schools Three Year CTBS Comparison, Matched Scores (n = 76)



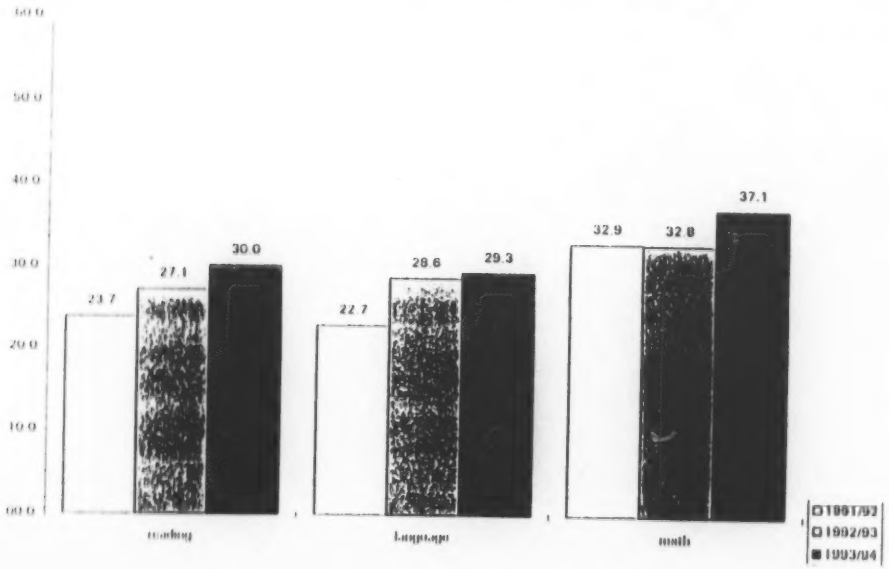
Appendix F

BEST COPY AVAILABLE

Boys: Pilot Schools Three Year CTBS Matched Scores (n = 28)

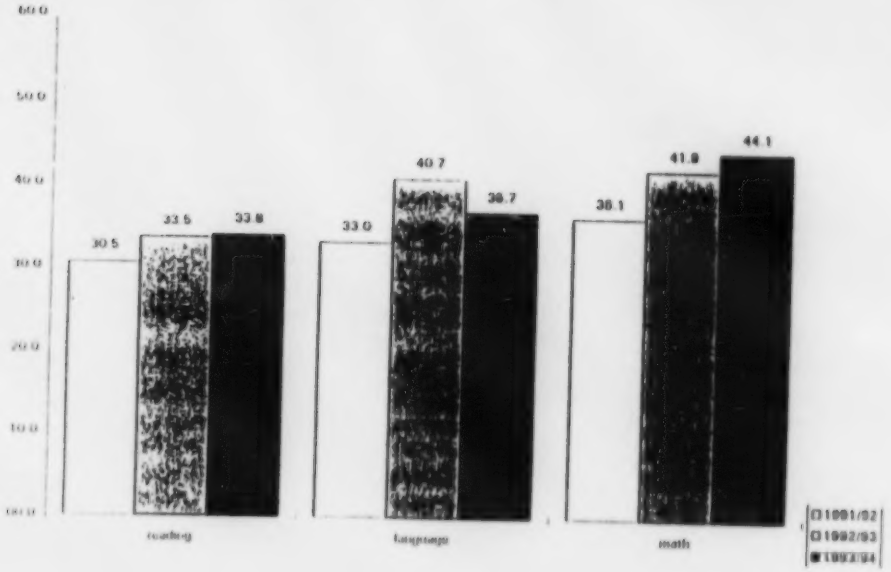


Boys: Comparison Schools Three Year CTBS Matched Scores (n = 39)

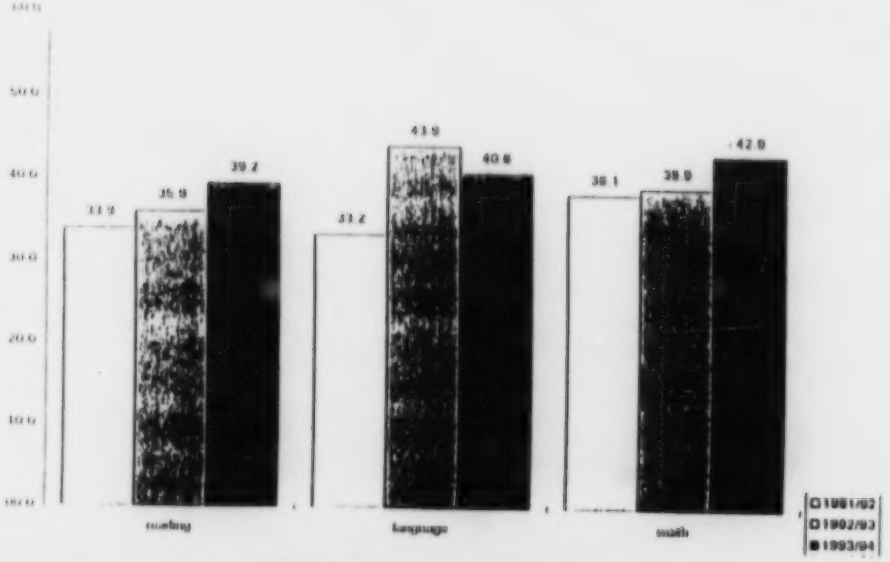


BEST COPY AVAILABLE

Girls: Pilot Schools Three Year CTBS Matched Scores (n = 52)

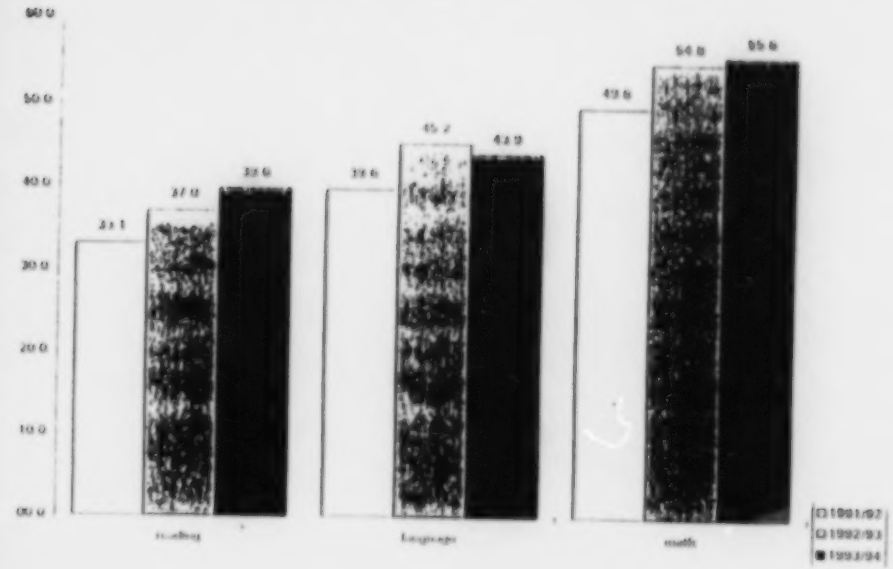


Girls: Comparison Schools Three Year CTBS Matched Scores (n = 37)

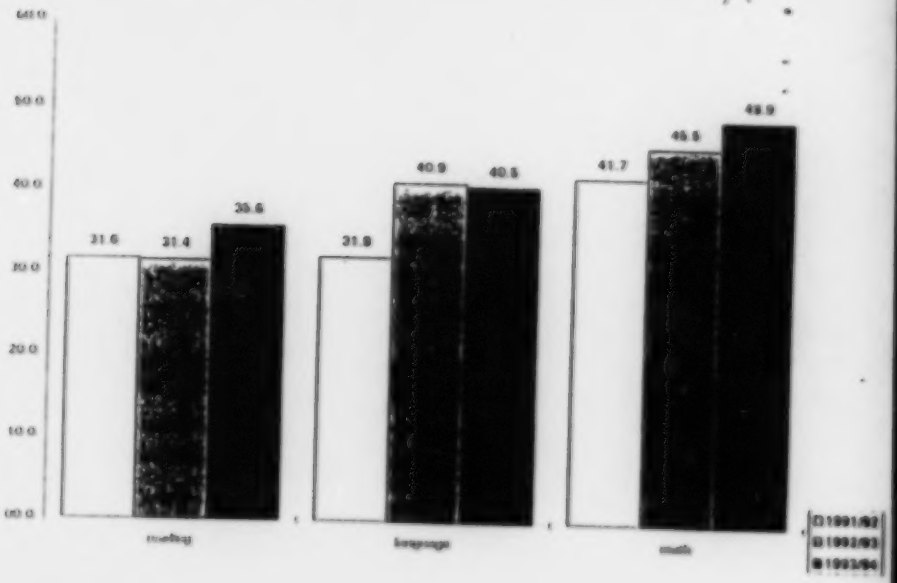


BEST COPY AVAILABLE

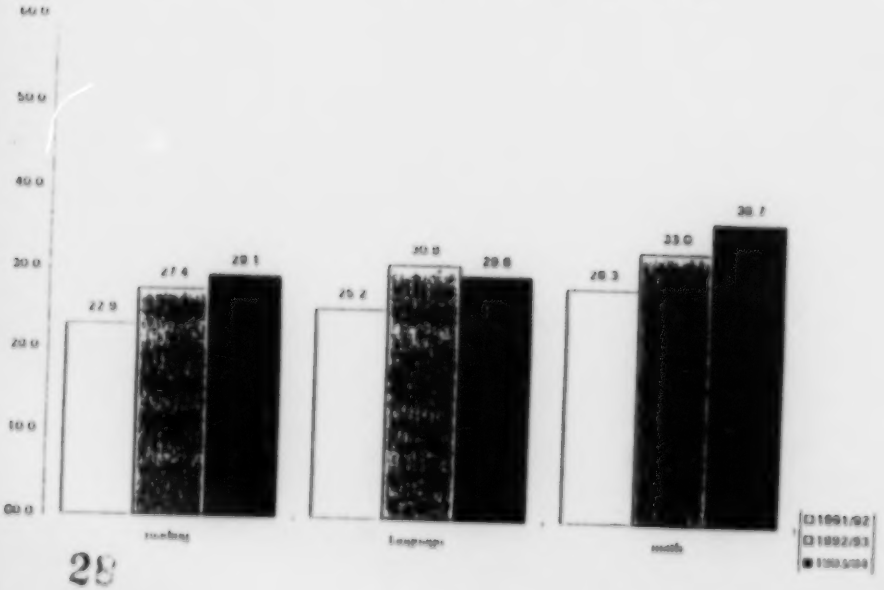
Asian Students: Pilot Schools Three Year CTBS Matched Scores (n = 321) 20



Asian Students: Comparison Schools Three-Year CTBS Matched Scores (n = 221) X 20

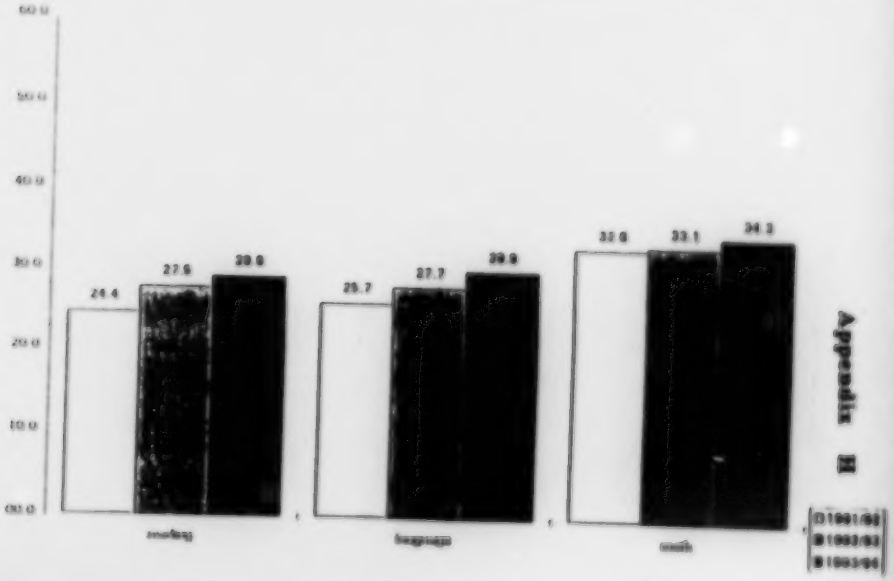


African American Students Pilot Schools Three Year CTBS Matched Scores (n = 321)



28

African American Students Comparison Schools Three-Year CTBS Matched Scores (n = 181)

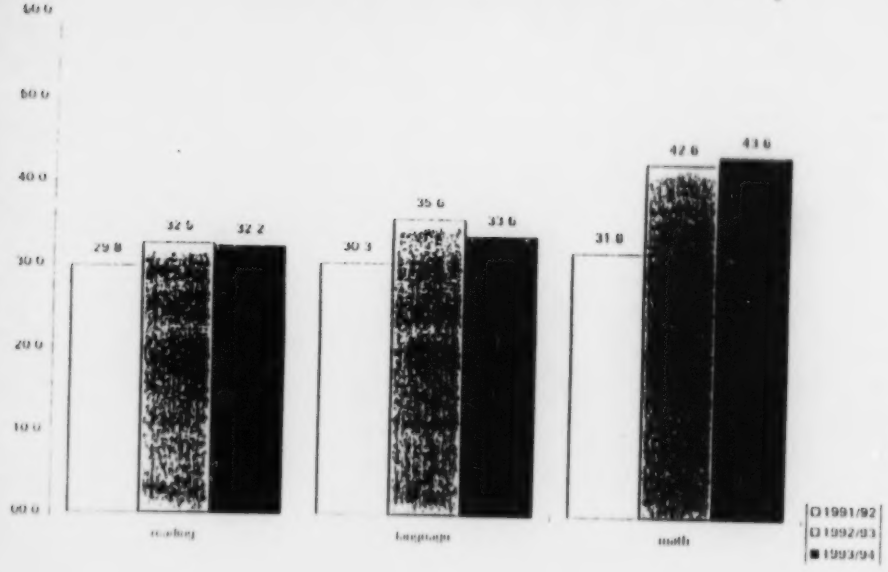


Appendix H

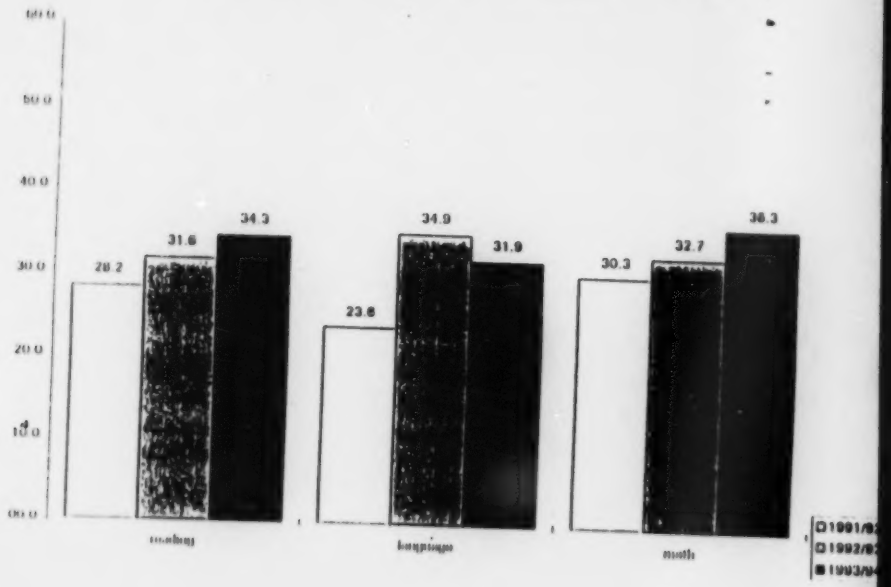
29

BEST COPY AVAILABLE

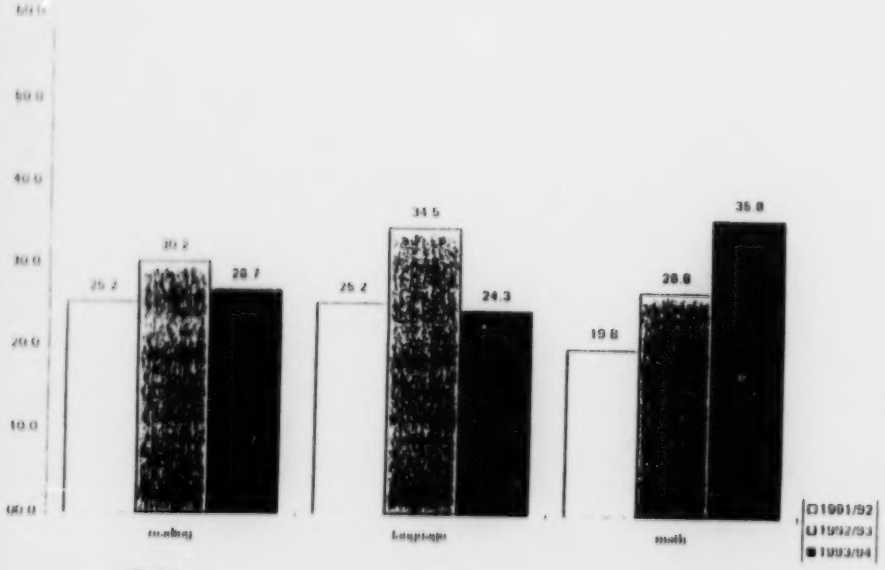
Hispanic Students: Pilot Schools Three Year CTBS Matched Scores (n = 20)



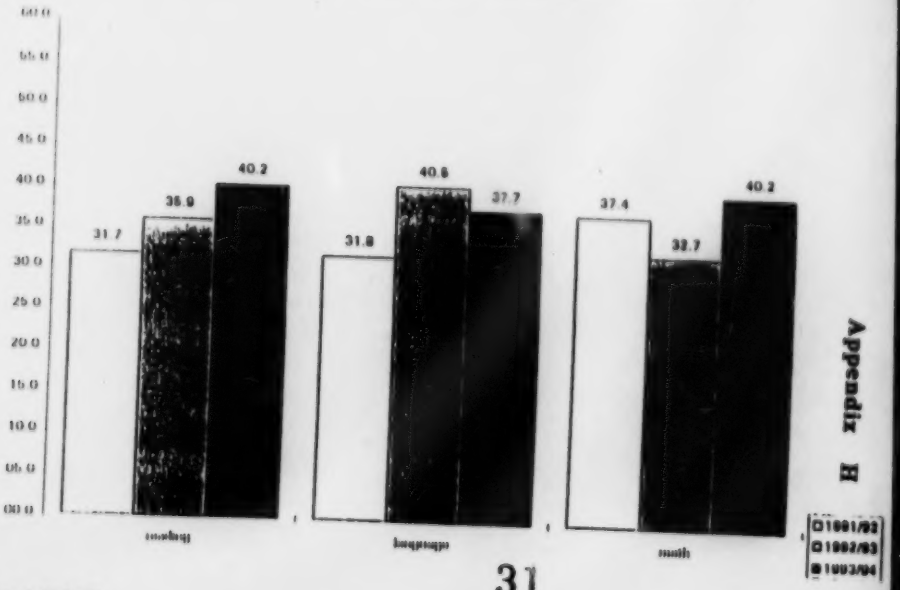
Hispanic Students: Comparison Schools Three-Year CTBS Matched Scores (n = 20)



White Students: Pilot Schools Three Year CTBS Matched Scores (n = 6)



White Students: Comparison Schools Three-Year CTBS Matched Scores (n = 17)



Appendix H

BEST COPY AVAILABLE

Comparison of the Detroit Study with the Sacramento Study

The Detroit study was a 1-year study that documented changes in CAT (California achievement test) scores for experimental and control groups. Pre- and post-Efficacy scores were reported for each group, and statistically significant changes were identified. Statistically significant differences between experimental and control groups were also identified. Units of measurement included scale and GEUs (grade equivalent units).

The Sacramento study was a 2-year study that documented changes in CTBS scores for pilot and comparison school groups. Pre- and post-efficacy scores were reported for each group; statistically significant differences between pilot and comparison groups were also identified. Units of measurement were NCE percentile scores.

Detroit findings:
Reading: Both groups showed increase in GEUs over a 1-year period, and experimental students increased more than controls.

Math: both groups had increased GEUs, experimental students' GEUs increased more than controls.

Sacramento findings:
Reading: Both groups had increased NCEs over the 2-year period. Pilot schools showed a significant increase in year 1, while comparison schools showed a significant increase in year 2. There was no significant difference in results between the two groups of schools.

Math: both groups had a significant increase over the 2-year period. Pilot schools had a significant increase in the first year, comparison schools had a significant increase in the second. In Math, there was significantly greater improvement in NCEs for the pilot schools than there was for the comparison schools over the 2-year period.

Language: Both groups had a significant increase over the two year period, both had a significant increase in year one but not in year two.

Conclusions:
Sacramento results are consistent with the findings of the Detroit study. Neither study was able to show a statistically significant relationship between the SAM and measures of student achievement.

BEST COPY AVAILABLE